

# EUROPEAN PATENT OFFICE

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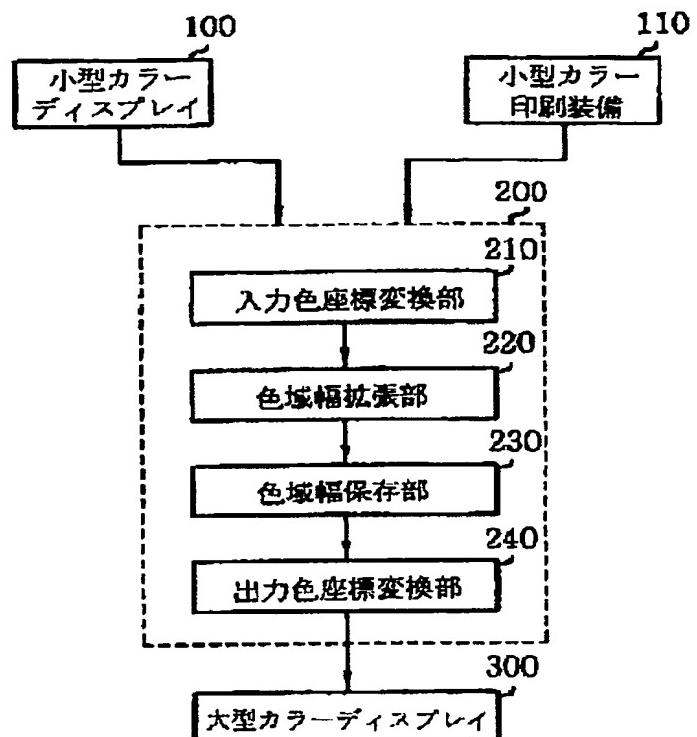
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TITLE : LINEAR COLOR GAMUT WIDTH  
 EXPANDER FOR COLOR DEVICE AND  
 METHOD THEREOF



ABSTRACT : PROBLEM TO BE SOLVED: To linearly expand the color gamut width to improve the picture quality in a process of converting and outputting a small color gamut of a display and a relatively narrow color gamut of a printer to a wide color gamut of a large color gamut display.

SOLUTION: Color coordinates of red (R), green (G) and blue (B) are inputted from a device having a small color gamut and transformed to color coordinates of lightness ( $L^*$ ), chroma ( $C^*$ ) and hue ( $h$ ), the transformed color coordinates are linearly expanded to expand the color attributes of lightness ( $L^*$ ), chroma ( $C^*$ ) and hue ( $h$ ) and controlled to avoid moving the color attributes information of the expanded lightness and chroma out of the color gamut of a device having a large color gamut, and the color attributes information of the expanded lightness, chroma and hue are inverse transformed to the color coordinates of red (R), green (G) and blue (B) and transferred to the device with the large color gamut.

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